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Two New Psammobiontic Water Mites (Acari,  
Hydrachnella) from Japan\*

*With 2 Text-figures*

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**ABSTRACT** The following two new species and subspecies of water mites from interstitial water of a stream in Ibaraki Prefecture are described and illustrated:

*Atractides* (s. str.) *kotoensis* n. sp.

*Chelomideopsis schermeri japonensis* n. ssp.

This is the first report of the genus *Chelomideopsis* from Japan.

The present author has tried to collect water mites living in the interstitial waters of a small mountain stream Kôto-gawa, a branch of the River Naka-gawa in Gozenyama-mura, Higashi-ibaraki-gun, Ibaraki Prefecture, by digging holes into sand and gravel bars of the stream in these two years. In the present paper, the author deals only with the following two new species and subspecies among the materials obtained.

Hygrobatidae

*Atractides* (s. str.) *kotoensis* n. sp.

Athienemanniidae

*Chelomideopsis schermeri japonensis* n. ssp.

Both the holotype specimens designated in this paper will be deposited in the collection of the Department of Biology, Faculty of Science, Ibaraki University, Mito.

*Atractides* (s. str.) *kotoensis* n. sp.

(Fig. 1)

**Female.** Body of long ellipse in contour, 414  $\mu\text{m}$  in length, excluding coxae, 450  $\mu\text{m}$  long, including coxae and 252  $\mu\text{m}$  in width. Skin light yellow in color and covered with many fine striations. Eyes vestigial and their interval 120  $\mu\text{m}$ . A

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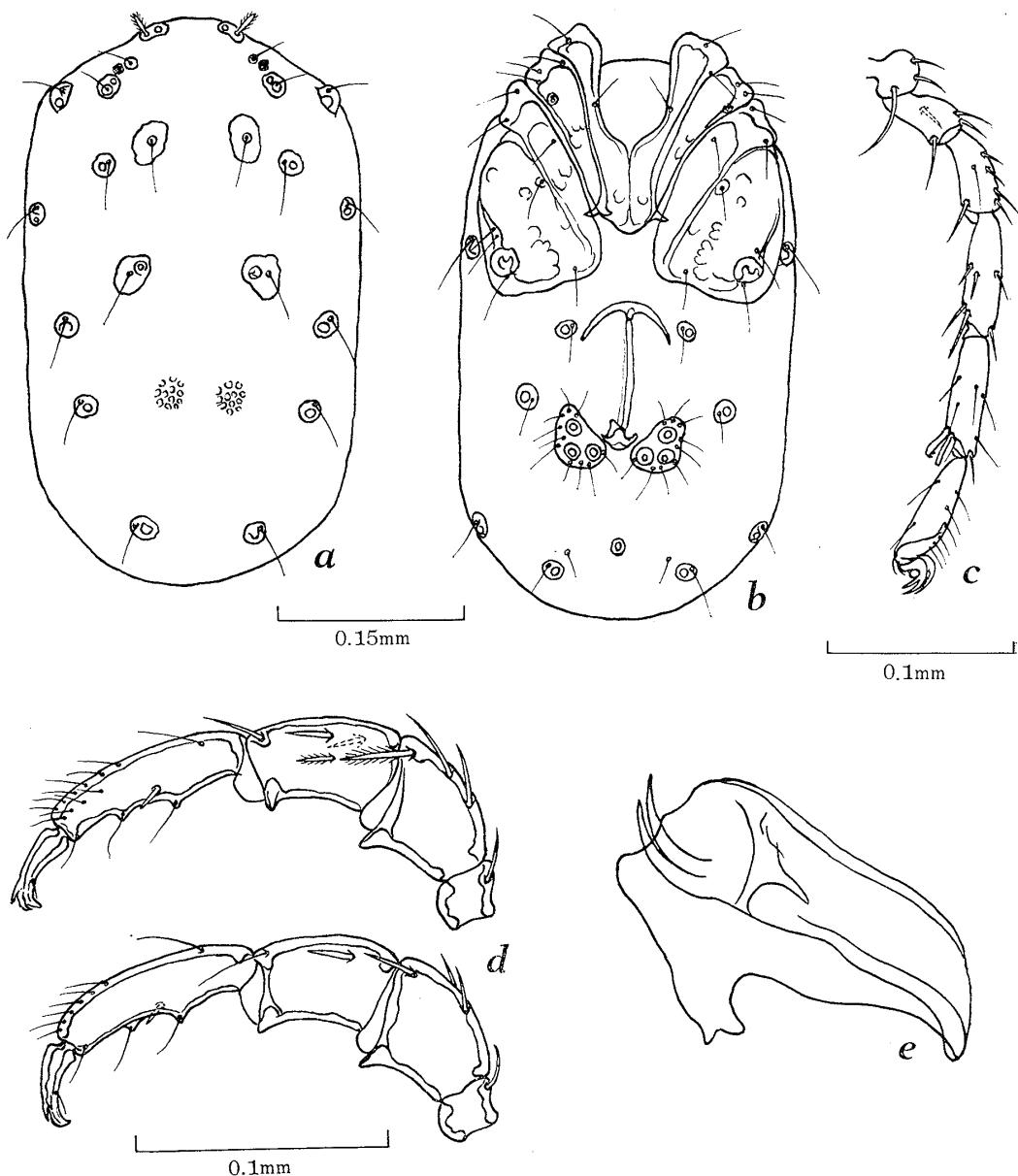


Fig. 1. *Atractides* (s. str.) *kotoensis* n. sp., female. —— a, Dorsal view; b, ventral view; c, left leg; d, palps; e, lateral view of capitulum with chelicerae.

pair of small club-shaped antenniform feathered bristles present near the anterior margin of body. Dorsum with one pair of platelets and eight pair of glandularia (Fig. 1a). Feature of coxae as shown in Fig. 1b. Coxal area occupied only less than a half portion of venter. Maxillary bay 84  $\mu\text{m}$  in depth and 60  $\mu\text{m}$  in width. Gonopore long and 96  $\mu\text{m}$  in length. Genital acetabular plates each almost triangular in shape, confined to the posterior portion of genital field. Three pair of acetabulae. Progenital sclerite slender and long.

Capitulum 93  $\mu\text{m}$  in length. Palps as shown in Fig. 1d. Palpal segments measured in  $\mu\text{m}$  as given in Table 1.

Table 1.

Palpal segments	I	II	III	IV	V
Dorsal surface	15	57	54	80	30
Height	21	42	33	22	9

Chelicerae 153  $\mu\text{m}$  long, each including a claw. Legs with no swimming hair, measuring the length in  $\mu\text{m}$ : L-I, 264; L-II, 264; L-III, 306; L-IV, 438. I-Leg-6 scarcely bowed. Distal end of I-Leg-5 having two heavy setae, one of which having two minute hooks near terminal end.

Male unknown.

*Holotype.* Prep. No. 1877, female.

*Type-locality.* One female was captured on Oct. 7, 1981, in the interstitial water (water temp., 13°C) of sand and gravel bar of the River Kôto-gawa.

*Remarks.* *Atractides* (s. str.) *kotoensis* n. sp. is similar to the following psammobiontic species: *A. sabulonis* COOK, 1967 from India; *A. pygmaeus* MOTAS, et TANASACHI, 1948 from Rumania; *A. primitivus* WALTER, 1947 from Rumania and Germany; and *A. asticae* PETROVA, 1968 from Bulgaria. The present new species is distinguished from all of these four species by the feature of dorsal and ventral glandularia, dorsal platelets, first legs and the feathered spines on palps.

### *Chelomideopsis schermeri japonensis* n. ssp.

(Fig. 2)

*Female.* Body of short oval in dorsal view, 600  $\mu\text{m}$  in length and 556  $\mu\text{m}$  in width. Eyes present, small and 276  $\mu\text{m}$  in their interval. Skin hard, light yellow in color and with numerous pores. Dorsal shield of short oval, 560  $\mu\text{m}$  in length, 496  $\mu\text{m}$  in width, trenched by a narrow dorsal groove from ventral shield. Three pair of glandularia present on dorsal shield, locating near lateral borders as shown in Fig. 2a. View of coxae as shown in Fig. 2b. A pair of glandularia present at posterior edge of fourth coxae. Genital field oval, wider than long, 124  $\mu\text{m}$  in length and 152  $\mu\text{m}$  in width, with 42 acetabulae on right side and 44 acetabulae on left side. Genital plates each of banana-shape, 100  $\mu\text{m}$  long and 34  $\mu\text{m}$  wide at the widest middle portion. Anus located at just behind genital organ.

Palpal segments measured in  $\mu\text{m}$  as given in Table 2.

Table 2.

Palpal segments	I	II	III	IV	V
Dorsal surface	34	72	44	105	32
Height	28	52	56	50	20

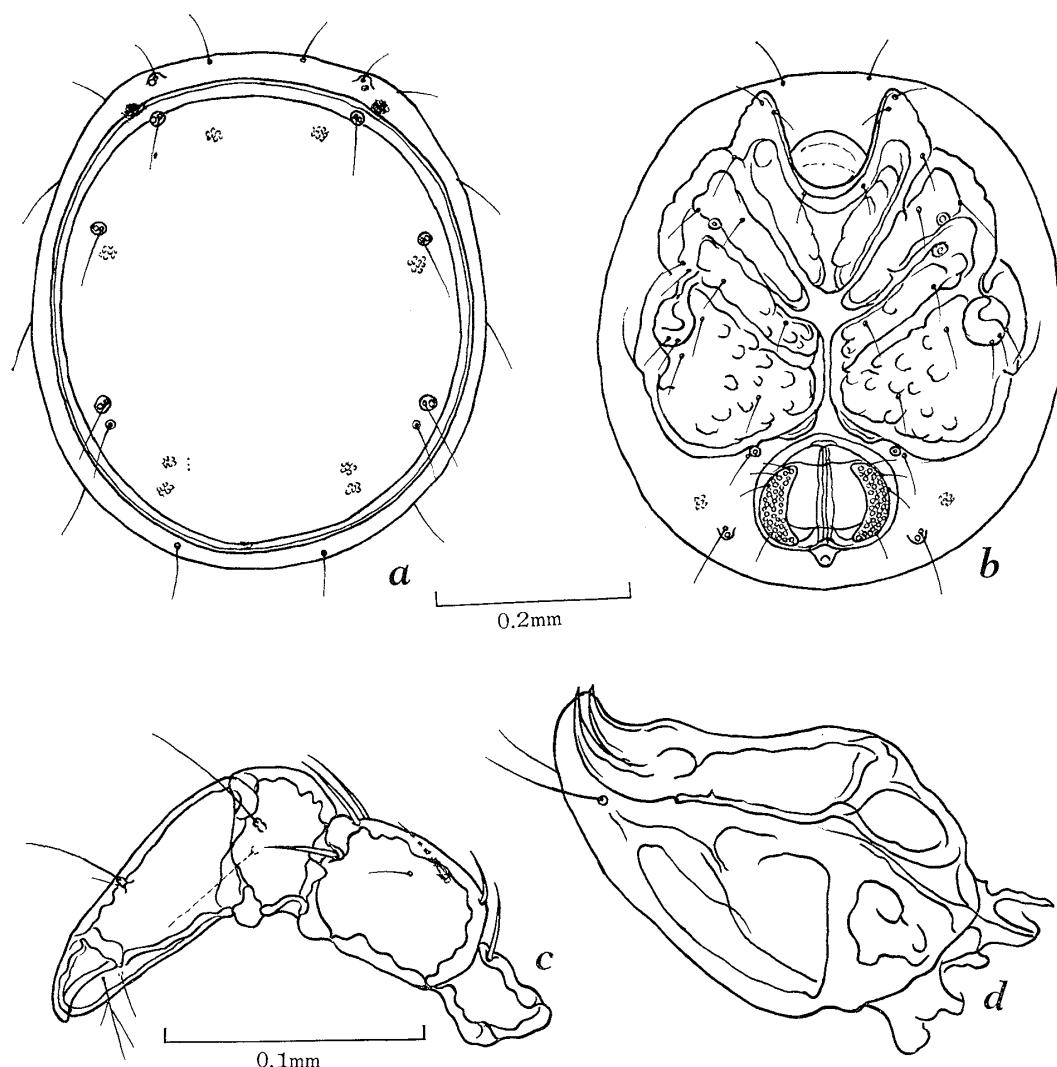


Fig. 2. *Chelomideopsis schermeri japonensis* n. ssp., female. — a, Dorsal view; b, ventral view; c, right palp; d, lateral view of capitulum with chelicerae.

P-II with six setae mostly on dorsal surface. P-III with two spines, one on each lateral side. P-IV with two slender hairs near on terminal portion, distal one of which trifurcated as shown in Fig. 2c. Capitulum 164  $\mu\text{m}$  in length and 116  $\mu\text{m}$  in height, having two slender spines. Chelicerae 160  $\mu\text{m}$  in length, each including a claw. Legs having no swimming hair and equipped with a moderate number of spines. Measurement of legs in  $\mu\text{m}$ : Leg-I, 368; Leg-II, 400; Leg-III, 404; Leg-IV, 500. Body light yellow in color.

Male unknown.

*Type-specimen.* Holotype, Prep. No. 1878, female.

*Type-locality.* One female was captured on September 3, 1981 in the inter-

stitial water (water temp., 16.5°C) of sand and gravel bar of the small stream Kôtogawa.

*Remarks.* *Chelomideopsis schermeri japonensis* n. ssp. is the first species of the genus from Japan. This subspecies is closely related to the European subspecies *C. schermeri schermeri* (VIETS, 1920) and the American one *C. schermeri besselingi* (COOK, 1961). The Japanese new subspecies is distinguished from the European and American subspecies by the following points: 1) inhabitant of the interstitial water; 2) body light yellow in color; 3) P-II with six spines. Both the European and American subspecies inhabit small cold mountain streams, springs and seepage areas, except for a report from a lake in Sweden. The Japanese new subspecies seems to have evolved as a psammobiont.

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